

NATIONAL GEOGRAPHIC Explorer!

Pioneer Edition

nationalgeographic.com/ngexplorer/pioneer/teachers

Dear Teacher:

Your students truly become global explorers in this issue.

We begin near Australia, where a team of scientists have learned that dolphins use tools.

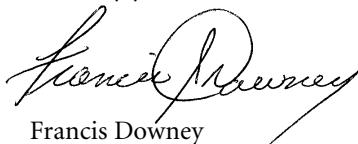
Then we jet to Papua New Guinea to meet a few of the diverse "Painted People" of that South Pacific nation.

Next we plunge to a "Sea Lab" off the coast of Florida. Living and working some 60 feet below the surface, scientists are studying coral reefs and their inhabitants.

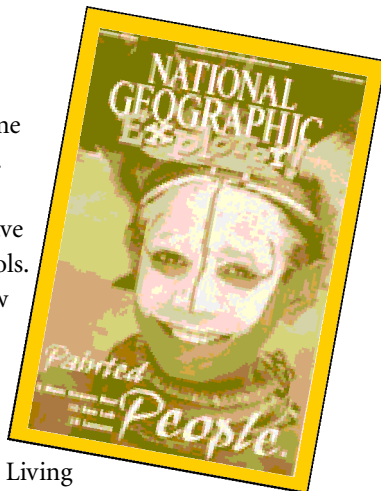
Finally we head to Madagascar. There we meet lemurs, encounter threats to their survival, and learn how lemurs from American zoos may help their wild cousins survive.

The adventure doesn't end on paper. Surf our website for Comprehensive Check handouts you can print and assign, a Spanish translation of "Lemurs," a game about coral reef creatures, resource links, and much more.

Sincerely yours,



Francis Downey
Executive Editor



This Issue

PAINTED PEOPLE PP. 4-9

Curriculum Connections

- Social Studies • Reading • Geography

Standards Correlation: Social Studies

- Culture and Cultural Diversity

Literacy Skills

- Genre: first-person narrative
- Inferences and conclusions

Content Areas

- Indigenous peoples • Cross-cultural interaction

SEA LAB PP. 10-17

Curriculum Connections

- Marine Science • Environment • Writing

Standards Correlations: Science

- Scientific inquiry • Science and technology

Literacy Skills

- Developing scientific vocabulary
- Nonfiction text features: maps, diagram

Content Areas

- Oceanography • Coral Reefs

LEMURS PP. 18-23

Curriculum Connections

- Life Science • Reading • Writing

Standards Correlations: Science

- Organisms: diversity and adaptations
- Populations and ecosystems

Literacy Skills

- Summarizing • Nonfiction text feature: sidebar

Content Areas

- Animal behavior • Endangered species

Answer Key

Back Page • Student Edition, p. 24

1. Port Moresby, 2. northwest, 3. Australia, 4. Bismarck

False Faces? • Teacher's Guide, p. 3

1. true, 2. false, 3. false, 4. false, 5. true, 6. false, 7. true, 8. true, 9. false, 10. true

Dive In! • Teacher's Guide, p. 5

1. oceanographer, 2. bends, 3. Global warming, 4. Bleaching, 5. polyps, 6. Conch

Review • Teacher's Guide, p. 8

1. C, 2. D, 3. B, 4. D, 5. D, 6. C, 7. D, 8. A

Next Issue

Sept. Oct. **Nov./Dec.** Jan./Feb. Mar. Apr. May

Neck and Neck

Go on safari to an inn where giraffes live.

Snow Science

Discover the science of snow.

Viking Voyages

Explore the world through the eyes of Vikings.



Painted People

Vocabulary

Direct students to p. 9. Then read aloud each sentence below and ask which glossary entry best fills the blank.

- Lunch cost 15 _____. (*kina*)
- Blue jeans are a famous part of American _____. (*culture*)
- _____ in the United States are sometimes called Indians. (*Indigenous people*)
- Tim is a member of the Cherokee _____. (*tribe*)

Before Reading

- Tell students that they are going to read an article called “Painted People.” Ask what they think the article will be about.
- Explain that the story takes place in a South Pacific country called Papua New Guinea. Help students find it on a map or globe.

Fast Facts

- New Guinea is the world’s largest tropical island. Papua New Guinea lies in the east, and Irian Jaya, a province of Indonesia, occupies the west.
- More than 2,000 species of ferns and 3,000 species of orchids grow on the island.
- More human cultures exist in Papua New Guinea than anywhere else in the world. Despite outside influence, many of these cultures remain intact.
- Tribe members adorn themselves with both traditional decorations (ochre and crushed shells) and modern items (white-out and motor oil).

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Critical Thinking and Writing

- **Main Idea:** Read aloud each sentence below. Ask which best summarizes the article. (*Answer: c*)
 - a. Cristina Mittermeier is a photographer.
 - b. Huli men and women live apart.
 - c. Papua New Guinea is home to many different tribes and languages.
- **Compare and Contrast:** Have students write an imaginary dialogue between an American kid and a child from Papua New Guinea. Characters should discuss similarities and differences between their cultures.

Extension Activities

- **Language Arts:** Tell students to imagine that EXPLORER has hired them to interview one of the people shown in the article. Have them write at least five questions they would ask.
- **Social Studies:** Divide the class into small groups. Assign each group to research and create a poster about Papua New Guinea. Items on the poster might include a political map, a physical map, photographs of the land and its people, a timeline of key dates in the nation’s history, a list of key agricultural and industrial products, and blurbs about major tourist attractions.
- **Creative Writing:** Direct students to p. 8, on which Cristina Mittermeier describes her encounter with a man holding a stinging nettle plant. Have students write compositions in which they imagine what the man was thinking.



National Geographic Book

Peoples of the World by various contributors, edited by K.M. Kostyal (2001)



Explore Our Website

- Papua New Guinea country profile
- maps
- resource links
- Papua New Guinea postcards

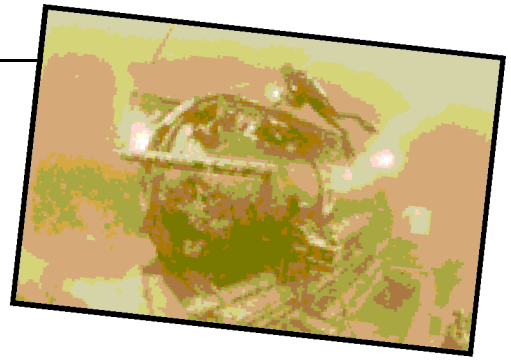
False Faces?



Study "Painted People" on pages 4–9 of **NATIONAL GEOGRAPHIC EXPLORER**. Then decide if each sentence below is true or false.

1. _____ Cristina Mittermeier takes photos of indigenous people.
2. _____ Everyone in Papua New Guinea speaks the same language.
3. _____ Huli men do most of the tribe's work.
4. _____ Only female tribe members can enter spirit houses.
5. _____ Mittermeier shot 100 rolls of film at Mount Hagen.
6. _____ Papua New Guinea is in the Atlantic Ocean.
7. _____ Some people make hats out of ferns and plants.
8. _____ People lined up to have their pictures taken.
9. _____ Tribal festivals attract very few people.
10. _____ Tribes sometimes use pigs as a form of money.

Sea Lab



Vocabulary

- Tell students that, in Greek mythology, Aquarius was a boy who carried a jug of water. Ask if Aquarius is a good name for an underwater lab.
- Write *bleaching*, *coral polyp*, *global warming*, and *oceanographer* on the board. Ask students what all the terms have in common. (*They are nouns.*) Challenge students to write an original sentence that uses one of these terms.

Before Reading

- Invite students to identify extreme environments. (*Possible answers: desert, polar regions, seafloor, space.*) Ask: What problems would you face if you lived there? What could you bring to help you?
- Direct students to the map on p. 12. Point out Aquarius and explain that it's an underwater lab. Ask: Is underwater a good place for a lab? Why?

Fast Facts

- Aquarius was built in Victoria, Texas, in 1986. It was placed in Salt Water Canyon in the U.S. Virgin Islands in 1988. After 13 missions, Aquarius was taken to Wilmington, North Carolina, for refurbishing. In 1992, the lab was placed nine miles south of Key Largo, Florida.
- Aquarius weighs 81 tons.
- Running the lab costs between \$1.3 million and \$1.5 million a year.
- More than 70 percent of Earth's surface is covered by ocean.
- The ocean holds 97 percent of Earth's water.
- Geographically, Earth has one ocean. It is sometimes called the world ocean. Continents divide the world ocean into four main parts. They are (from largest to smallest) the Pacific Ocean, the Atlantic Ocean, the Indian Ocean, and the Arctic Ocean.
- Some people call the waters surrounding Antarctica the Southern Ocean.
- *Sea*, *gulf*, and *bay* are terms commonly used to name parts of the ocean that are enclosed (either partially or almost totally) by land.

Critical Thinking and Writing

- **Inference:** After reading the story, ask students to identify ways that the ocean affects life on land. Then ask: Why is protecting the ocean important?
- **Synthesis:** Ask students to write a paragraph that explains how people can affect the ocean.
- **Persuasion:** Invite students to imagine that they are applying to take part in an Aquarius mission. Have them write essays that discuss why they're interested and what makes them good candidates for working in the underwater lab.

Extension Activities

- **Earth Science:** Divide the class into groups. Assign each group to research one of the following ocean features: abyssal plain, basin, continental shelf, ridge, or trench. Have each group present its findings to the class.
- **Scientific Inquiry:** Encourage students to create a mission plan for an Aquarius mission. It should cover what the student would study and why that research is important.
- **Creative Writing:** Explain to the class that the ocean has inspired a sea of literature. It includes Shakespeare's *Tempest*, Melville's *Moby-Dick*, Hemingway's *Old Man and the Sea*, and much more. Encourage students to write their own poems or stories about the ocean.



National Geographic Books

Atlas of the Ocean by Sylvia A. Earle (2001)

The Oceans Around Us by Kate Boehm Jerome (2003)



Explore Our Website

- Game: *Coral Reef Creatures*
- lesson plans
- Quick Flick: *Underwater World*
- ocean links



Read the "Sea Lab" article in NATIONAL GEOGRAPHIC EXPLORER. Then complete each sentence below with a word or phrase from the box.

bends	oceanographer	Conch
polyps	global warming	bleaching

1. An _____ studies the ocean.
2. Nitrogen bubbles in your body can cause the _____.
3. _____ is causing a worldwide rise in temperature.
4. _____ is a process that kills coral polyps, causing reefs to whiten.
5. Coral _____ make coral reefs.
6. Aquarius is located near _____ Reef.



Lemurs

Vocabulary

Direct students to the glossary on p. 23. Ask the following questions.

- Which word means the same thing as *meat-eater*? (*predator*)
- Which two words are opposites? (*diurnal* and *nocturnal*)
- What is the root word of *endangered*? (*danger*)

Before Reading

Draw and complete a KWL chart on the board.

- **Column K:** What do pupils know about lemurs?
- **Column W:** What would they like to find out?
- **Column L:** (*Complete after reading.*) What did students learn from the article?

Fast Facts

- The word *lemur* comes from the Latin word for ghost. Many lemurs are indeed nocturnal.
- Like monkeys and apes, lemurs are primates.
- Some lemurs store fat in their tails. The fat sustains the animal when food is scarce.
- Male lemurs tend to be submissive to females.
- Lemurs have keen eyesight, yet many species rely heavily on scents to mark territory.
- Lemurs have a wide repertoire of vocalizations. These can include whistling, barking, honking, and sneezing.



Explore Our Website

- Comprehension Check handout
- Spanish translation ■ resource links

Comprehension Check

Read each question aloud (or print a handout from our website).

- **Who** thought of a new way to help lemurs? (*A group of scientists*)
- **What** animal eats lemurs? (*The fossa*)
- **Where** do wild lemurs live? (*Madagascar*)
- **When** are aye-ayes active? (*At night*)
- **Why** are lemurs endangered? (*Habitat loss*)

Critical Thinking and Writing

- **Main Idea:** Copy the “Leap Into Lemurs” handout from the next page and distribute it to students to complete.
- **Compare and Contrast:** Direct students to write a paragraph that explains the difference between diurnal and nocturnal animals.
- **Pro/Con:** Conduct a class debate about the lemur-reintroduction project. To do so, divide the class into three groups. Assign Group A to argue in favor of the project and Group B to oppose it. Group C should listen to both sides, then decide which is more convincing and why.

Extension Activities

- **Writing:** Have students write a news story based on the last two sections of the article.
- **Social Studies:** Form small groups. Tell each group to create a poster about Madagascar. Each group’s poster should include a map, pictures, and key facts (capital, population, language, major economic activities, and the like).

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 EDUCATION FOUNDATION

Leap Into Lemurs



NATIONAL GEOGRAPHIC EXPLORER'S article about lemurs has seven parts. Write a complete sentence about the main idea of each part.

Introduction

Night Walker

In the Daytime

The High Life

Lemurs in Trouble

A Wild Idea

A New Home

COMPREHENSION CHECK

Name: _____

The Five W's

Read "Lemurs" in NATIONAL GEOGRAPHIC EXPLORER.
Then answer the questions below.

1. **Who** thought of a new way to help lemurs?

2. **What** animal eats lemurs?

3. **Where** do wild lemurs live?

4. **When** are aye-eyes active?

5. **Why** are lemurs endangered?



Answer Key for Handouts October 2005 ■ Pioneer Edition

Painted People PP. 4–9

False Faces?

Comprehension Check • Teacher's Guide, p. 3

1. true, 2. false, 3. false, 4. false, 5. true,
6. false, 7. true, 8. true, 9. false, 10. true

Sea Lab PP. 10–17

Dive In!

Comprehension Check • Teacher's Guide, p. 5

1. oceanographer, 2. bends, 3. Global warming,
4. Bleaching, 5. polyps, 6. Conch

Lemurs PP. 18–23

Leap Into Lemurs

Extension Activity • Teacher's Guide, p. 7

Answers will vary.

The Five W's

Comprehension Check • Website

1. a group of scientists, 2. the fossa, 3. Madagascar, 4. at night, 5. habitat loss

Review

Teacher's Guide, p. 8

1. C, 2. D, 3. B, 4. D, 5. D,
6. C, 7. D, 8. A